Conventional
Figure 1

100

Web Site
105

Web Server
Cluster
110

Application
Server
Cluster
112

Database 116

2. HTML page generated

Firewall 108

Internet 104

1. User enters URL

3. HTML with embedded URLs returned

4. Requests for embedded objects

5. Rich content served

User 102

User 102

User 102

Figure 2A

Figure 2B

$...<L_1><BA><L_2><NB><L_3><PG><L_4><PC><L_5><RP><L_6>...$

Figure 2C

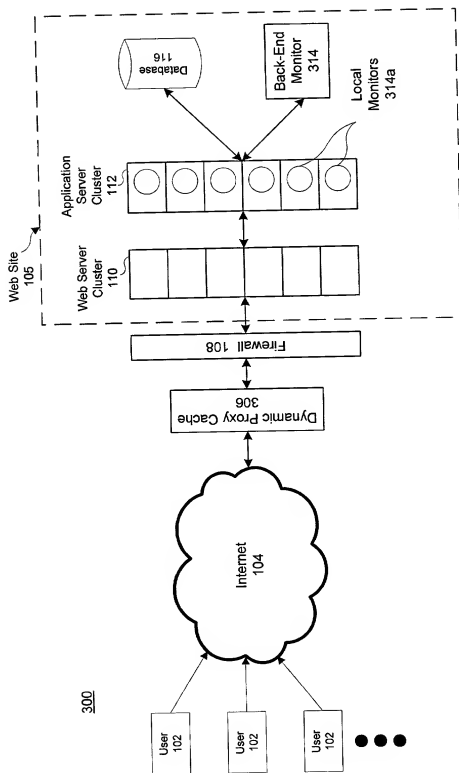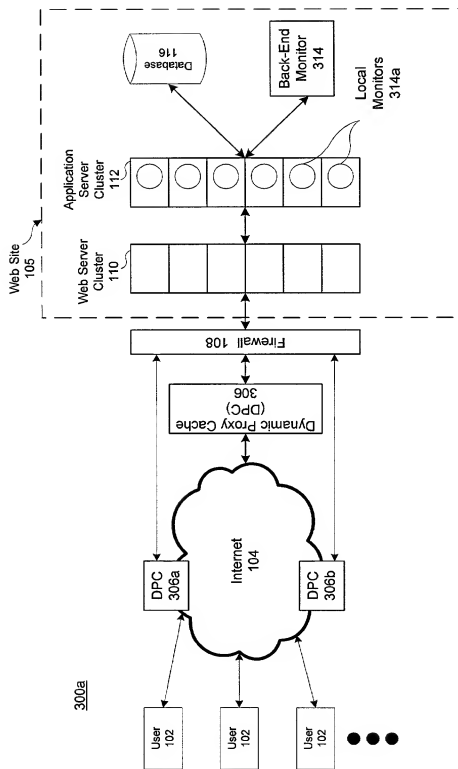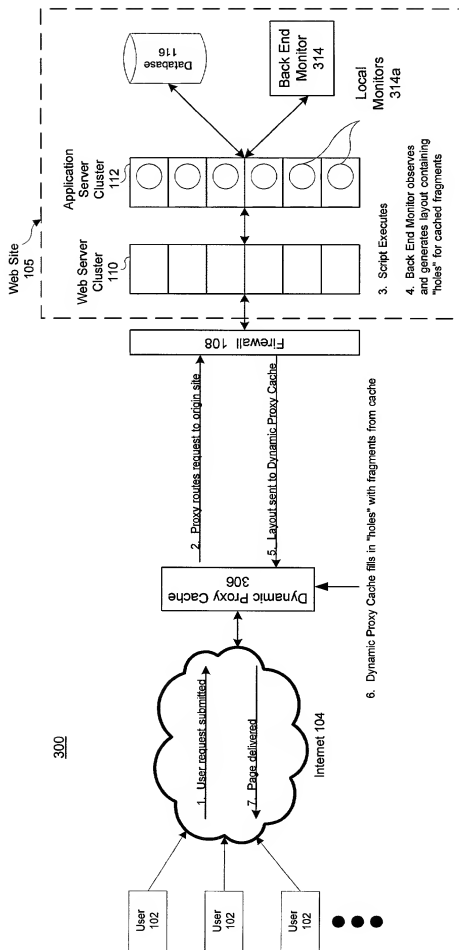$...<L_7><BA><L_8><NB><L_9><FP><L_{10}><PC><L_{11}>...$

Figure 2D

Figure 3A

Figure 3B

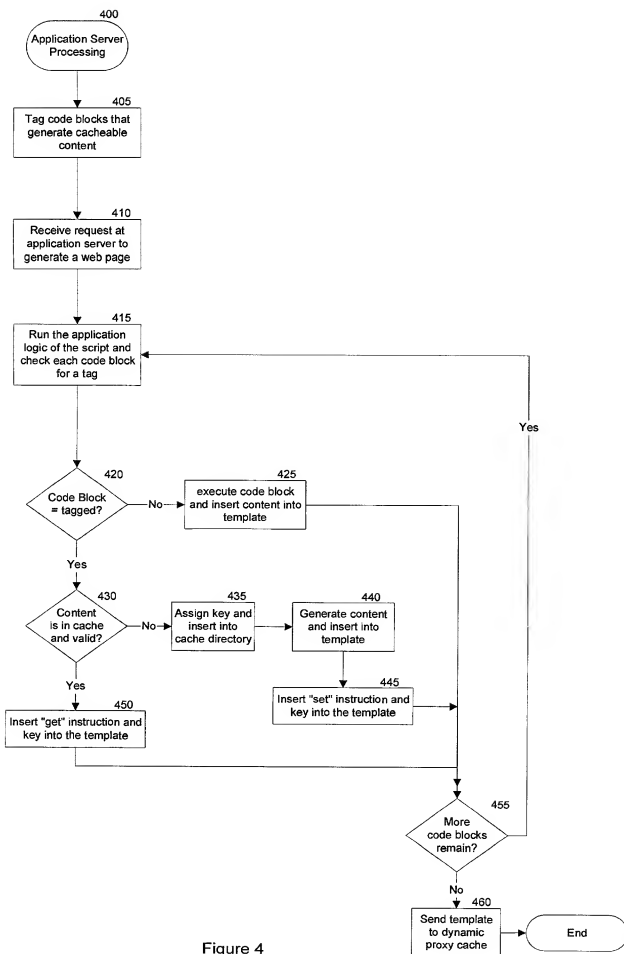Figure 3C

Figure 4

Figure 5

Figure 6

Figure 7

Page 600a

- Banner Ad (BA) 602a
- Personal Greeting (PG) 604a
- Navigation Bar (NB) 606a
- Product Category Detail (PC) 608a
- Recommended Products (RP) 610a

Script 600

- 602 Logic to display ad
- 604 Logic to display personal greeting
- 606 Navigation bar formatting
  - `<dpc::nbKey;360>` 706a
  - `<dpc>` 706b
  - 706
- `<dpc:pcKey+catID;60>` 708a
- 608 Logic to display product category detail
- `<dpc>` 708b
- 708
- `<dpc:rpKey+uID;30>` 710a
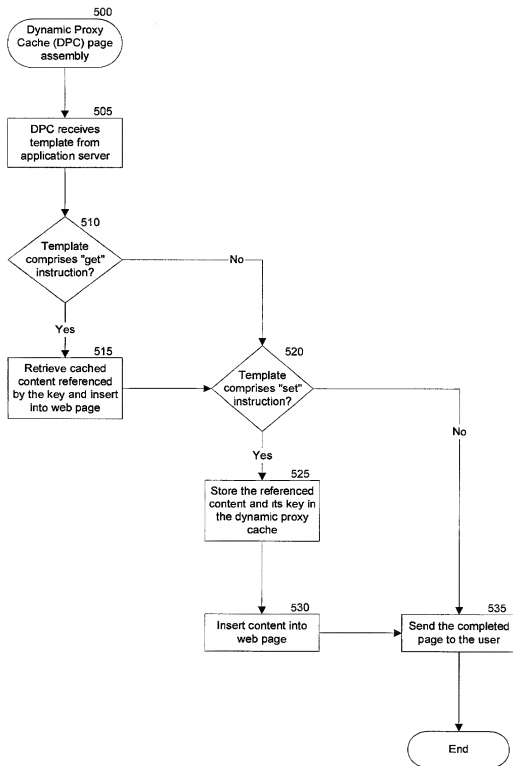- 610 Logic to display recommended products
- `<dpc>` 710b
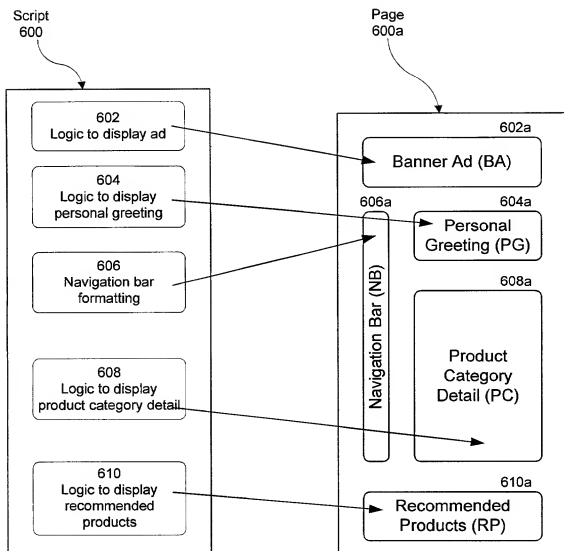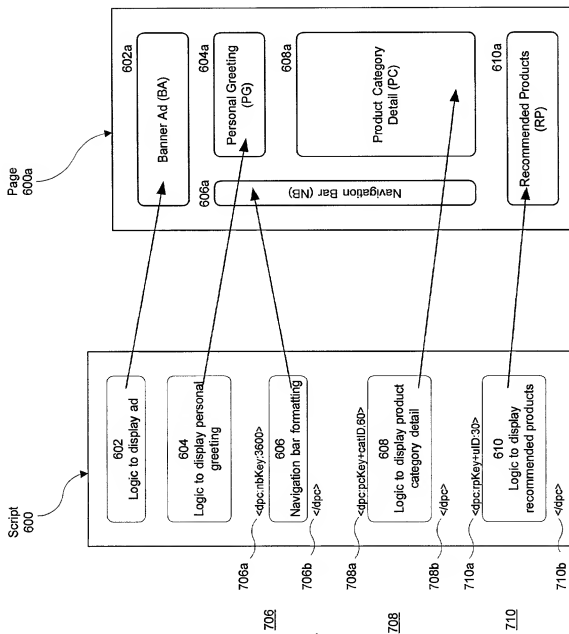- 710

800

```
[802] ...HTML for Banner Ad
[804] ...HTML for Personal Greeting
[806] <dpc:1:set>HTML for Navigation Bar...</dpc>
[808] <dpc:2:set> HTML for Product Category Detail...</dpc>
[810] <dpc:3:set>HTML for Product Recommendations...</dpc>
```

Figure 8

900

```
[902] ...HTML for Banner Ad
[904] ...HTML for personal greeting
[906] <dpc:1:get>
[908] <dpc:2:get>
[910] <dpc:3:get>
```
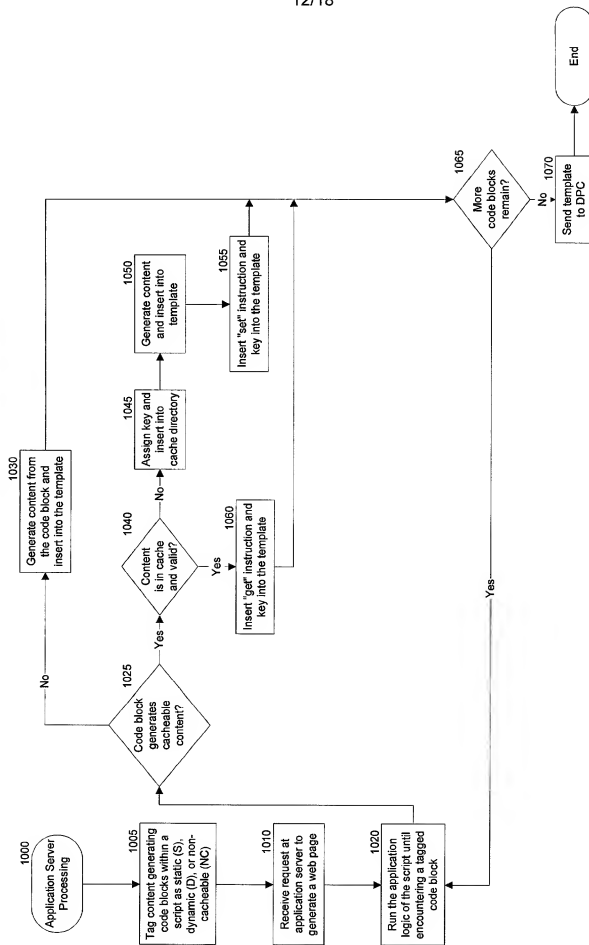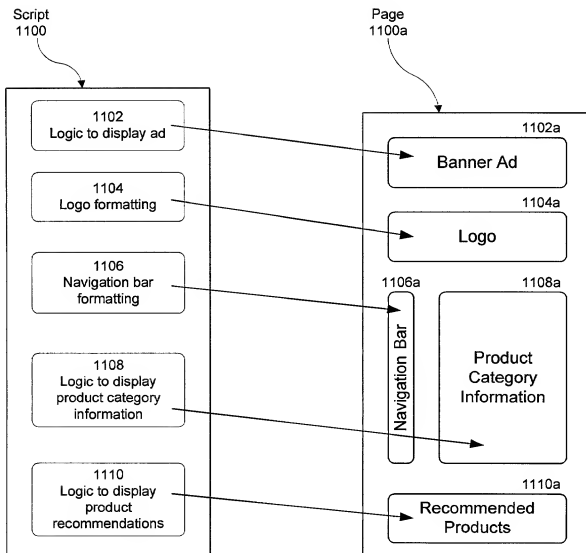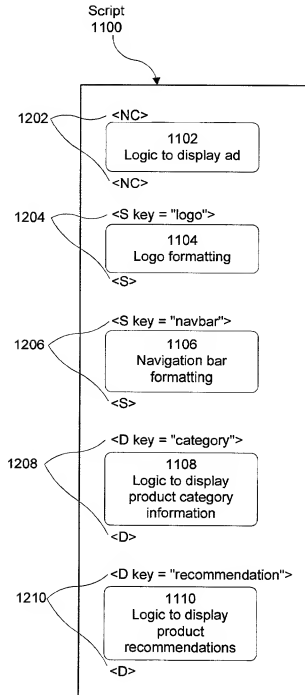
Figure 9

Figure 10

Figure 11

Figure 12

1300

```
[1302] <HTML> . . . SRC=slectedAD.gif
[1304] <S key="logo" S>HTML text for
        logo...</S>
[1306] <S key="navbar" S>HTML text
        for navigation bar...</S>
[1308] <D key ="category" S>generated
        HTML text for product category
        information...</D>
[1310] <D key="recommendation" S>HTML
        text corresponding to
        recommendation logic...</HTML></D>
```

Figure 13

1400

```
[1402] <HTML> . . . SRC=slectedAd.gif
[1404] <S key="logo" G>
[1406] <S key="navbar" G>
[1408] <D key ="category" G>
[1410] <D key="recommendation" G>
```

Figure 14

1500
Back-end Monitor
Cache Directory Key
Assignment

1505
Set the maximum value for a dpc key to generate the free list

1510
Back-end monitor receives a request for a cacheable fragment

1515
Fragment ID exists in cache directory?

—No→

1520
Insert fragment ID and time to live in cache directory

1525
Set isValid to true

1530
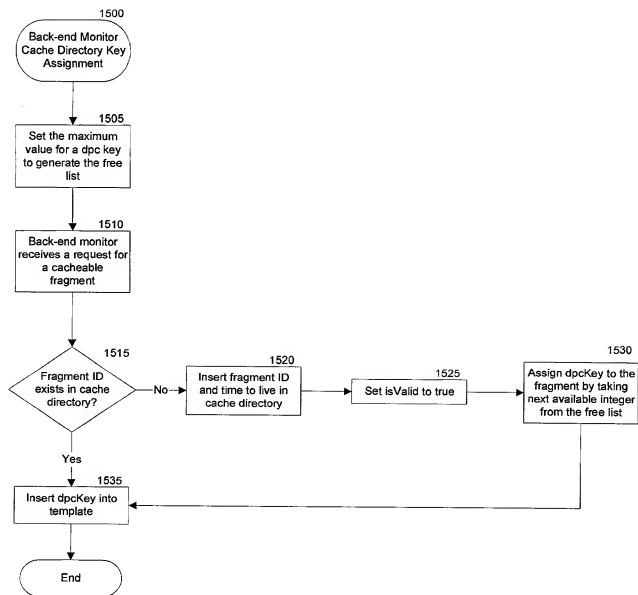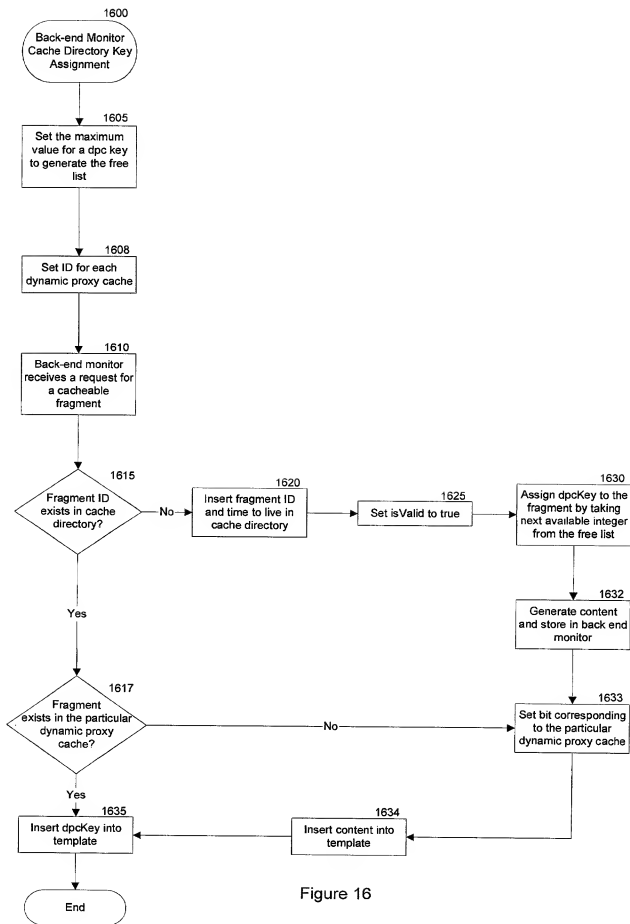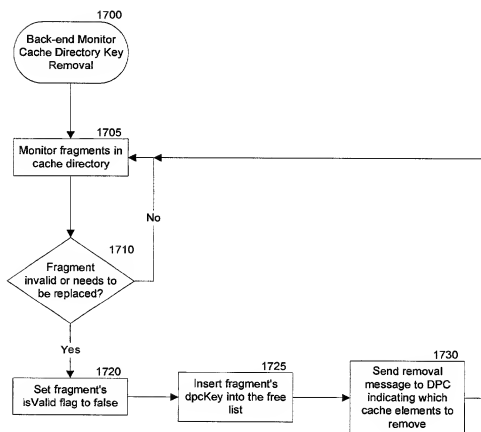Assign dpcKey to the fragment by taking next available integer from the free list

Yes

1535
Insert dpcKey into template

End

Figure 15

Figure 16

Figure 17